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State of Utah
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DIVISION OF WATER QUALITY

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DIV. OF OIL, GAS & MINING

December 6, 1996

Mr. Ed King
Jumbo Mining Company
6305 Fern Spring Cove
Austin TX 78730

Dear Mr. King:

Subject: Jumbo Mining Co. Letter of October 29, 1996

In your letter of October 29, 1996, you raise several points regarding the potential threat to ground water which are posed by the inactive leach pads at the Drum Mine. We recognize two major issues in this case related to potential ground water pollution. First, there is evidence that there have been discharges of process water from the leach pads in the past. The extent and magnitude of any pollution from these discharges is largely unknown. Secondly, there is the possibility that the pads in their current state may be causing an ongoing discharge of contaminants. At this time we feel the priority should be to resolve this second issue so the site can move to appropriate closure or other resolution. Notwithstanding, Jumbo and/or Western Mining Co. remains liable for any injury to the groundwater resource due to past or present operations.

In your letter, you report the results of sampling runoff from the leach pads after storm events. Since our concern is the quality of leachate generated by the pads that could potentially migrate to groundwater, this type of data is very important for making decisions on further requirements for the site. Until we are in agreement that the data you provided is representative of all leachate generated by the pads, we are unable to consider any proposal for resolution of the second issue. Therefore, we would like to take additional samples to confirm your results. These samples need to be the best possible representation of actual leachate quality over the entire area of the pads. During earlier inspections of the site, representatives of this agency and other state and Federal agencies observed that the collection ditches and pipelines leading back to the preg pond have deteriorated and leachate from the pads is not contained within the collection system. This raises the possibility that leachate from some portions of the pads is not reporting to a point where it may be sampled. In view of this, if you would like to use this type of information to justify a particular plan for future management of the leach pads, we must be assured the samples are as

representative as possible of actual leachate quality. Information needed to support this justification would include a description on the condition of the leachate collection system as it relates to sampling, and the report must also show proposed sample sites and the areas of the leach pads which drain to these points. This information must also include an evaluation of whether the condition of the leachate collection system would jeopardize sample integrity. When we can conclude that a representative set of data could be collected, we would like to arrange additional samples to be collected by our representative. Please prepare the report within 30 days so we can be ready for winter storm events.

Please contact Mark Novak of this office if you have any questions.

Sincerely,

Don A. Ostler, P.E.
Director

DAO:MN:wlm

cc: Wayne Hedberg, DOGM
Rex Rowley, BLM Fillmore Office
Allan Cerny, Western States Minerals
Central Utah Health Dept.
Roger Foisy, District Engineer

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FILE:JUMBO MINING

m/027/007

Staff Report

Title: Observation of Perched Aquifer Sampling at Jumbo

Date: November 6, 1996

Author: Sheri Wysong

On September 10, 1996, I was in attendance while Dave Hartshorn and Don Gavin of Jumbo Mine sampled the perched aquifer at the Drum Mine.

Ron Teseneer and I had conducted an inspection at the mine a few days before, and when we had arrived Dave Hartshorn and Don Gavin were just beginning to try to purge the holes in order to sample them the next day. As it turned out, the pump was broken, and the sampling had to be put off until the next week. Because of all the controversy over the perched aquifer and Jumbo's imminent hearing before the Board of the Stated of Utah Division of Oil, Gas and Mining, I felt it would be useful to observe how the sampling was conducted. Also, we agreed that it would be a good idea for me to take a split of the samples should questions arise later about the chain of custody. We discussed the fact that some of the tests, such as pH and cyanide content, must be conducted within 48 hours of the sampling, so that unless we had our splits run concurrently, some of our test results may not coincide with theirs. Since we did not want to run the samples unless there was a perceived problem with the results of their tests, we came to the conclusion that if it was necessary we would only need to run the tests for the more stable compounds, and that if they were consistent with Jumbo's samples the other results should be the same, as tampering with the sample bottle would skew all the results.

What I didn't realize until the day I arrived to watch the sampling was that three different bottles were used when taking samples; 2 each of plain bottles for anion analysis, Sodium Hydroxide-washed bottles for cyanide analysis, and Nitric Acid-washed bottles for metals analysis. If we were to have metals analysis conducted on the splits we kept, and it was consistent with the results of Jumbo's test, it would only mean that the metals bottle had not been tampered with. Therefore, although I did take splits of all the samples, the chain of custody issue was still at stake.

We sampled a total of five sites. Since some of the holes ran dry very quickly, I assisted in sampling in order to get the extra samples. MH-33, MH-34, MH-17, MH-7, and the preg pond. We attempted to sample MH-8, but there was no water in the monitoring hole. Mr Hartshorn said that the day before he and Mr. Gavin had purged the holes, so that any water would have leached in since the day before. The sampling was accomplished

by dropping the pump with a hose attached to it into the hole, and, after turning it on, letting water flow for about 10 seconds to purge the line of the last sample. We then filled the sample bottles directly from the hose.

The "monitoring holes" are actually exploration holes that had been drilled by Jumbo. In the course of that drilling, the perched aquifer had been discovered. According to Dave Hartshorn, there were many more holes drilled that exposed the aquifer, but that sampling conducted right after its discovery had revealed that the five holes mentioned above had the highest level of contamination, so that was why they were chosen as the monitoring holes. When I was there I saw pieces of plywood covering one or two of the holes, however, all the holes may have had similar covering, and I did not see when it was removed.

Jumbo maintains that sampling these monitoring holes is a valid means of monitoring the effluent from the pads, and has proposed this method for determining whether the pads have been adequately rinsed for reclamation purposes. However, the State of Utah, Division of Water Quality has not accepted this conclusion, although Don Ostler of that agency in a June 15, 1995 letter to Jumbo, did state it "could produce some information," he stressed that the "sample points are only open holes and not adequately-constructed monitor wells." So whether the samples represent the aquifer in itself is questionable. Also, the effluent coming off the pads has most likely not soaked completely through the heaps, and so there is a distinct possibly that they have contaminated pockets within them that could not be detected by Jumbo's proposed sampling plan.

During our September 4, 1996 inspection, both Ron and I stressed to Dave Hartshorn the importance of complying with DWQ's regulations regarding the unpermitted discharge from the heaps. He maintained that since the effluent had been sampled and the evaluation determined that there were no contaminants at levels above drinking-water standards, that a ground-water discharge permit was not necessary.

OPTIONAL FORM 99 (7-90)

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NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION